CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/KRIDL/W.No.08/WMM/Gradation/2013-14 02.09.2013

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Pot holes filling to roads in Ward No.08 (Kodigehalli), Kodigehalli Sub Division, BBMP, Bangalore.

Reference : EE/BTP/KRIDL/WO/127/2013-14 Dated: 24.08.2013

Date of Testing : 02.09.2013

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **25400**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	965	965	3.8	96.2	95-100
22.4	5530	6495	25.6	74.4	60-80
11.2	5145	11640	45.8	54.2	40-60
4.75	4780	16420	64.6	35.4	25-40
2.36	3165	19585	77.1	22.9	15-30
0.600	2450	22035	86.8	13.2	8-22
0.075	2145	24180	95.2	4.8	0-8

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Note:

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Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Pot holes filling to roads in Ward No.08 (Kodigehalli), Kodigehalli Sub Division, BBMP, Bangalore.
Reference	EE/BTP/KRIDL/WO/127/2013-14 Dated: 24.08.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.09.2013

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	387.5	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	88	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	298	303.5	
4	Aggregate Impact value = percent fines	22.80	21.68	
	100* (W_2/W_1)%			22.24

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of Work	Pot holes filling to roads in Ward No.08 (Kodigehalli), Kodigehalli Sub Division, BBMP, Bangalore.
Reference	EE/BTP/KRIDL/WO/127/2013-14 Dated: 24.08.2013
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.09.2013

Result : Flakiness Index = **12.57%**

Elongation Index = **13.76%**

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Result : Combined Flakiness & Elongation index 26.33%

Comments:

→ Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/KRIDL/W.No.08/BC/Bit/2013-14 12.09.2013

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX AS PER IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Pot holes filling to roads in Ward No.08 (Kodigehalli), Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/KRIDL/WO/127/2013-14 Dated: 24.08.2013
SAMPLE I/D	Pot hole filling to roads in Ward No.08
DATE OF TESTING	12.09.2013

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	26.50
7. Bitumen content in %	5.20	5.30
8. Average	**5.25**	

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GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

AS PER IS2386 & IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Pot holes filling to roads in Ward No.08 (Kodigehalli), Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/KRIDL/WO/127/2013-14 Dated: 24.08.2013
SAMPLE I/D	Pot hole filling to roads in Ward No.08
DATE OF TESTING	12.09.2013

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	474	
19	0	0	0	100	100
13.2	45.28	9.55	9.55	90.45	79-100
9.5	35.26	7.44	16.99	83.01	70-88
4.75	83.74	17.67	34.66	65.34	53-71
2.36	95.28	20.10	54.76	45.24	42-58
1.18	42.13	8.89	63.65	36.35	34-48
0.6	36.42	7.68	71.33	28.67	26-38
0.3	25.87	5.46	76.79	23.21	18-28
0.15	37.23	7.85	84.64	15.36	12-20
0.075	44.69	9.43	94.07	5.93	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	52.69	11.13	11.13	88.87	79-100
9.5	35.23	7.44	18.57	81.43	70-88
4.75	73.14	15.45	34.01	65.99	53-71
2.36	86.59	18.29	52.30	47.70	42-58
1.18	45.27	9.56	61.86	38.14	34-48
0.6	36.23	7.65	69.51	30.49	26-38
0.3	27.48	5.80	75.32	24.68	18-28
0.15	35.29	7.45	82.77	17.23	12-20
0.075	48.52	10.25	93.02	6.98	4-10

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